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**Assessing the impact of pubs on community cohesion and
wellbeing
in the English countryside: a longitudinal study**

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Assessing the impact of pubs on community cohesion and wellbeing
in the English countryside: a longitudinal study

STRUCTURED ABSTRACT

Purpose

The study presented in this paper explores and examines how public houses or pubs function as facilitators and developers of community cohesion and social interactions in rural areas of England.

Design/methodology/approach

The authors use data and information about facilities and services available for 284 rural parishes in two different points in time (2000 and 2010) to elaborate an index measurement of community cohesion. The index, created upon a range of discrete variables capturing multiple aspects of community living, is then investigated by using structural equation models to assess the impact of pubs in shaping the levels of community cohesion in the English countryside.

Findings

Findings gathered from the analysis identify a strong positive relationship between the presence of pubs and higher levels of community cohesion index occurring within the examined parishes, indicating that this relationship is maintained in time regardless of size of the parish, although different impacts are found in the two time-points considered.

Research limitations/implications

Since the study is based on a longitudinal examination, it can stimulate research on themes and issues regarding the impact of third places on community cohesion and social capital in rural and remote communities, increasing the amount of information and data available. For instance, due to the nature of information considered, the study could not explore the effects on rural communities' wellbeing associated with different types of pubs' ownership and management.

Practical implications

These results provide a valuable and original contribution to the literature related to the measurement of community cohesion and wellbeing with regard to third places such as small businesses and local retailers, whose significant functions of fostering social aggregation and communal initiatives at a local level are frequently neglected.

Social implications

Findings from this study provide a valuable opportunity for policymakers and local administrators to evaluate policies and actions in support of their communities. In particular, findings provide an original piece of information about the social value of community pubs particularly in small and peripheral areas of England

Originality/value

The paper provides new and original information about the importance of pubs and third places in general in fostering and developing community cohesion and wellbeing at a local level. Given the significant paucity of empirical studies in the field, the paper represents a valuable contribution to knowledge with particular regard to the methodology applied as well as the potential implications of its findings.

Keywords: Pubs, Third Places, Community Cohesion, Structural Equation Models, Spatially Remote Areas, Rural England

Assessing the impact of pubs on community cohesion and wellbeing in the English countryside: a longitudinal study

1. Introduction

In recent years, many studies have explored and examined the societal role and significance of *third places*, defined as places and locations other than private homes and working environments where people tend to spend significant amounts of their time (Oldenburg, 1989, 2001; Ramsay, 1996; Woolcock, 1998; Tiepoh and Reimer, 2004; Besser, 2009). Several studies have demonstrated a strong positive relationship between the presence of third places and levels of community cohesion and engagement at a local level (Woolcock, 1997; Besser, 2009; Watson and Watson, 2012).

In England, public houses or *pubs* represent important third places for social aggregation and provide the physical settings for many types of communal activities (Maye *et al*, 2000; Mount and Cabras, 2015). Particularly in the English countryside, pubs are essential in fostering and developing social relationships among residents, strengthening the level of community cohesion in villages and parishes and positively contributing to communal wellbeing and provision of social capital. While a positive impact of pubs for local communities seems confirmed by several studies (Maye *et al*, 2000; Mayo and Ross, 2009; Cabras and Bosworth, 2014), none of these studies have been able to investigate the scale of their impact over time, failing somehow to provide evidence of a cause-effect relationship.

The study presented in this paper intends to fill this gap by investigating the longitudinal impact of third places, and specifically of pubs, in facilitating community cohesion and social interactions within communities living in the English countryside. By using an original longitudinal dataset comprising information on facilities and services available for 284 English rural parishes, the authors develop a number of structural equation models (SEMs

hereafter) to investigate the impact of pubs on an established index measure of community cohesion that uses a range of variables to capture multiple aspects of community living.

The paper comprises of six sections, including this brief introduction. Section two discusses and illustrates the theoretical background of the study, providing an overview of the progressive decline in pubs that has occurred in England and across the UK, focusing on pubs operating in spatially remote areas and rural parishes, identifying third places and analysing their importance with regard to concepts such as community cohesion and social capital, and explaining the significance of these places for rural communities. Section three describes data used and methodology applied. Section four documents the results gathered from the data analysis. Section five explores and discusses findings in detail. Section six concludes.

2. Literature review

3.1 The Decline of Pubs in England and the UK

Pubs represent an important part of English and British culture, economy and society. Their social and economic significance within the UK has been addressed and analysed in a number of studies (Hunt and Satterlee, 1986; Bowler and Everitt, 1999; Jones et al., 2000; Pratten and Lovatt, 2002; Pratten 2003, 2004; Cabras and Reggiani, 2010; Cabras, 2011; Mount and Cabras, 2015). Despite this importance, the number of pubs in the UK registered a steady decline since the 1980s. According to the British Beer and Pubs Association (2015), the total number of pubs passed from about 67,000 to less than 51,200 in the period 1982-2014.

A variety of causes and factors that affected, and still affect, British pubs today can explain such decline. One of the causes lies in the changes that occurred in the sector since the 1960s, which saw the separation of pubs from breweries that traditionally owned them. Preece et al. (1999, p. 12) state that 80 per cent of British pubs were owned by brewers in the

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2
3 1980s, with six major companies dominating the market. After a number of conglomerate
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5 mergers, which brought the market on the brink of entering a monopoly phase, Parliament
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7 issued the Beer Order, forcing large brewers to vend pubs (posing a threshold of 2,000 above
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9 which half of the remaining pubs they owned had to be sold) or cease brewing. Breweries,
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11 consequently, had to sell pubs at very attractive prices that led to the rise and enlargement of
12
13 corporate pub-chains or *pubcos* dedicated to retail.
14
15

16 From the early 1990s, these companies dominated the sector. Figures related to lease and
17
18 tenancy holders exploded, bringing the vast majority of pubs under direct control of large
19
20 national brewers and corporate pub chains (Preece, 2016). Conversely, the number of free
21
22 houses, privately owned or family managed pubs, decreased. 'Tied pubs', pubs that are tied to
23
24 buy their beverages and other supplies from specific retailers, most frequently the pubco
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26 owning or leasing their premises, soon became the majority in the market, controlling
27
28 approximately 55% of all pubs in 2011. More recently, some of the largest pubcos have
29
30 incurred financial losses, which catalysed significant disinvestment, ownership changes and
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32 several pub closures (Andrews and Turner, 2012). As a result, at the end of 2014, two fifths
33
34 of British pubs were owned by pubcos, two fifths were free-houses and the rest owned by
35
36 breweries. Albeit this rebalances in the market and the introduction of self-regulative bodies
37
38 to monitor the industry, many tenants are still struggling financially with many generating a
39
40 profit below minimum wage (All Party Parliamentary Save the Pub Group 2014).
41
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43
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45 Changes in the ownership structure also brought about changes in the marketing
46
47 strategies pursued by pubs with regard to customers. Many pubs ceased their traditional beer-
48
49 oriented vocation and started to develop into different types of businesses e.g. gastro-pubs or
50
51 European style cafes (Lincoln 2006). Pratten (2003) mentions the so called 'theme-pubs',
52
53 which combine drink-retailing with a specific environmental setting (i.e. sophisticated
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premises, 1980s designed style etc.). Other examples include sports bars, which target customers by showing a wide range of different sporting events.

A significant decrease in alcohol prices from off-licenses and supermarkets has also had an impact on customers' choice and on the attractiveness of pub nights. Smith and Foxcroft (2009) indicate an increase from 10% to about 42% in total alcohol sales made through off-trade premises and a corresponding decrease from 90% to 58% in on-trade sales (pubs, clubs, restaurants, etc.) between 1971 and 2006. This situation provides more incentives for people to drink at home rather than in public places (Pratten 2004). In parallel, the growth of home entertainment has also contributed to making pub nights less attractive. Devices such as high-definition TVs and home-theatre sound systems have become progressively more affordable and the commercialization of video-game consoles that enable players to play in groups of two or more has provided significant opportunities for in-house gatherings. As a consequence, the average number of night outs among households has been progressively reduced and mainly pushed to the weekend (Cabras et al., 2012).

3.2 The Significance of Pubs Serving Rural Communities in England and the UK

The factors causing the decline of pubs are exacerbated for those businesses operating in spatially remote and rural areas, most commonly known as village or rural pubs, which appear to have suffered significantly in the past decade. The Institute for Public Policy Research (2012) indicates that 12 pubs shut down each week in rural areas of the UK in 2009. More recent figures provided by Campaign for Real Ale (CAMRA, 2012) confirm the negative trend, but indicate a reduction in pub closures in rural areas to four per week. The dispersed nature of rural population and reduced catchment areas in terms of custom make these pubs more vulnerable to changes. Fewer opportunities with regard to public and/or alternative transport magnify the effect of drink-driving laws, and a reduced availability of

amenities and infrastructure discourage individuals working, shopping and maintaining social networks beyond the rural areas in which they reside (Champion and Brown, 2012; Cabras and Bosworth, 2014).

Furthermore, rural pubs may differ considerably from those in urban and suburban areas regarding the type of custom these businesses target and rely on. In urban areas, pubs represent an important component of the so called 'night-time economy' (NTE), based on clubs, bars and other licensed premises that attract residents as well as tourists to urban centres and have a significant impact for the local economy in terms of employment and revenues (Hough and Hunter, 2008; Tierney, 2006). During the 1990s and early 2000s, the NTE was recognized and encouraged by Governments with licensing and planning policies, and supported in conjunction with a national strategy that sought the re-vitalization of city-centre locations with the development and expansion of tourist, retail and leisure attractions (Hough and Hunter, 2008). Such support was not enjoyed by pubs located in rural areas, and many needed to reconfigure themselves into different types of businesses (e.g. gastro-pubs, bed and breakfasts) in order to survive.

This situation is likely to have generated effects on the rural communities and villages served by these pubs, hindering the social ecosystem supported by these places. According to Maye et al. (2005), each village pub has its own unique cultural terrain, where the word 'terrain' identifies a layering of relationships which includes the whole networking system that links villagers, traditions and modern facilities. For the villagers, 'the pub may operate as the centre of their social life, especially if there are no other alternative social facilities' (Hunt and Satterlee, 1986 p.523). For these reasons, village and rural pubs are perceived by local residents as vital and essential networking places, especially in communities located in disadvantaged areas with regard to major railway routes and road connections.

Moreover, such situation has hampered the role of pubs as third places, defined by Oldenburg (1989, 2001) as social contexts and surroundings in which individuals and groups of people tend to spend significant portions of spare time in alternative to homes and workplaces, identified as "first places" and "second places" respectively. Third places provide physical spaces for people to congregate and join together, shaping and delineating frameworks and boundaries for individuals and groups (Oldenburg, 2001; Watson and Watson, 2012); and facilitating the accumulation of social capital within the communities they serve, with social capital defined as the whole of relationships and ties among individuals which provide a degree of social interaction, cohesiveness and networking in a given community (Putman, 2000; Besser, 2009).

Social capital is often assumed to be a positive indicator of local wellbeing, as it favours the flow of knowledge and information among different components of the society. An accumulation of social capital tends to generate positive impacts on community cohesion (Granovetter, 1989; Tiepoh and Reimer, 2004), with community cohesion defined as ‘what must happen in all communities to enable different groups of people to get on well together (...) People all want to fulfil their potential and feel that they belong and contribute to their local area’ (Department for Communities and Local Government, 2008 p.10).

Empirical evidence seems to suggest that third places play an important functional role in providing platforms for these concepts to develop and expand (Botterman *et al*, 2012). Even if the social components defining rural communities tend to be more homogeneous and less diversified (e.g. in terms of age, employment, ethnic and cultural background) compared with those in urban areas, this does not necessarily mean that individuals living in rural areas face fewer challenges with regard to integration, participation in and engagement with community life (Stillwell, 2008). The number of second homes, with more than 165,000 households owning more than one dwelling in England, also has an impact on the social fabric of rural

communities (Campaign to Protect Rural England, 2013). Second homes are frequently concentrated in areas not located in proximity to major road or railway networks, with seasonal residents coming from very diverse backgrounds and generally not possessing a sense of local identity (Gallent, 2014). While second homes and seasonal residents may generate some positive outcomes for rural communities (e.g. increased accumulation of social capital due to networks expanding outside the community; Gallent, 2014), they frequently result in an increase of service rates and housing market prices, with social costs in terms of gentrification (Shucksmith, 1990; Lyons, 1996) and empty houses (with the risk for communities to be transformed in 'ghost towns'; Simms et al, 2002).

In light of these considerations, places such as village shops, local libraries, or pubs become essential hubs for social exchanges and interactions within rural areas, mostly characterized by spatial remoteness and a lower provision of services and facilities. The disappearance of these places, in terms of business closures, is often associated with the decline of several other initiatives and activities taking place at a local level. Their vanishing, therefore, generates 'black holes' within local communities whose effects go far beyond the mere closure of commercial businesses and services (Mount and Cabras, 2015).

Pubs in particular seem to be an ideal platform for the development of social and human relationships and communal activities and initiatives, other than providing opportunities for new business ventures and economic development (Cabras et al., 2012). Pubs function as physical hubs that foster engagement and involvement among individuals, and work as incubators for the development of social capital and networking, fostering and enhancing community cohesion. Moreover, pubs provide the settings where individuals or groups of people start initiatives that generate positive outcomes for the community or whole society, such as volunteering and charity activities, or at channelling passions and interests into a more structured effort, such as a social club or a sports team. In addition, while pubs are often

associated with issues such as alcohol intoxication and binge-drinking, these problems tend to occur almost exclusively in urban areas and only occasionally in the countryside (Institute for Public Policy Research, 2012), possibly due to past governments' policies favouring the NTE in urban centres, which at that time attracted criticism and raised concerns in the wider public (Hough and Hunter, 2008).

3. Data and Methodology

Most of the studies investigating community cohesion, wellbeing and social capital tend to use a qualitative approach, often based on case-studies. Econometric and statistical investigations are reduced in number, and even fewer studies address the role of pubs and other third places within rural and remote communities. This may be partially explained with the relative paucity of data available for rural and remote areas compared to more urbanised areas. Empirical work in the field has been conducted by Callois and Aubert (2009), who examined pubs and bars as indicators for social ties in a wider conceptualisation of community cohesion in four rural areas of France; by Cabras and Reggiani (2010), who explored the relationship between pubs and local wellbeing in Cumbria, a predominantly rural county located in the North West of England; and by Botterman et al (2012), who investigated the level of social and community cohesions in rural and urban areas of Belgium by using a wide range of indicators including presence or absence of charities and churches. While these studies represent significant contributions with regard to understanding the impact of third places on community cohesion and wellbeing, none of them investigated the scale of their impact over time, failing somehow to provide evidence of a cause-effect relationship.

For the purpose of this study, information about services and amenities in rural areas of England were extracted by the last Survey of Rural Services (SRS) conducted by Countryside

Agency in 2000. With the Countryside Agency disbanded in 2009, the collection of data regarding facilities and services in rural England ceased to be conducted at a national level. However, data collection continued sparsely at a local level, mainly administered by local branches of national charities and associations operating across the country, such as Rural Service Networks (RSN) and the Actions with Communities in Rural England (ACRE), and by a restricted number of local authorities.

In this context, the authors identified seven local authorities and organizations (Cambridgeshire County Council, Wiltshire County Council, Community Impact Buckinghamshire, Northamptonshire ACRE, Suffolk ACRE, the Rural Community Council of Essex and the Rural Community Council of Leicestershire and Rutland), which continue collecting data across rural parishes by using the SRS questionnaire as a platform. Figure 1 illustrates the location of parishes within their respective local authorities. Based upon these data, the authors compiled the dataset used in this study, with the aim to conduct a longitudinal analysis of the impact of pubs on level of community cohesion and wellbeing in rural communities.

[INSERT FIGURE 1 HERE]

Figure 1: Map of rural parishes identified for this study

In this investigation, the level of observed community cohesion for a given area is argued to be function of a variety of inputs such as common values and culture, social networks and place attachment (Kearns and Forrest, 2000). Building on these factors, the authors develop an index measure of community cohesion (*COMCOH*), which comprised 21 binary

categorical variables (e.g. assuming the value of 1 or 0 only) across four main components: *leisure activities (LEI)*—variables relating to a community’s access to social clubs and recreational activities; *communication (COM)*—variables relating to the spread of information within the community; *food facilities (FF)*—variables relating to a community’s access to local food facilities; *volunteering (VOL)*—variables relating to community-based voluntary activities. Using this measure, the authors seek to examine the longitudinal impact of pubs on levels of community cohesion in rural parishes of England. Table 1 provides the variable breakdown of these components, which were used to categorize variables in the dataset.

[INSERT TABLE 1 HERE]

TABLE 1. Index components and variables

An ordinal structural equation modelling (SEM) approach is adopted using a number of fixed and mixed effect models¹ to estimate the impact of pubs on *COMCOH* and potential random variations in impact owing to time. By comparing data collected from two discrete time points (2000 and 2010), the authors were able to match a total of 12 variables from the established index measure of *COMCOH* to construct a proxy measure such that:

$$COMCOH_i = \sum_{j=1}^4 LEI_{ij} + \sum_{j=1}^4 COM_{ij} + \sum_{j=1}^3 FF_{ij} + VOL_{ij} + \varepsilon_i \tag{1}$$

The resultant index is used as a dependent variable in the analyses that follow. During the SEM modelling procedure, the authors first examine the fixed effect impact of pubs on levels of community cohesion across all parishes and time points. Second, to account for

¹ With fixed and mixed effect models, we indicate a set of statistical regression models in which the independent variables have both fixed effects and random effects. Fixed effects have an influence on the population mean (e.g. a medical treatment), while random effects are associated with a sampling procedure (e.g. subject effect). These models are useful in investigating repeated measurements made on the on clusters of related statistical units or on same statistical units (longitudinal study).

potential random variations in impact owing to time, a latent repeated measures variable was created to index observations to their specific year (i.e. 2000 = 0 and 2010 = 1), which is then estimated as a mixed effects model. Population size is then introduced as a control to identify differences in small and large parishes. Finally, to examine the change in impact of pubs on community cohesion over time, a number of fixed effect SEM models are conducted to isolate and compare observations from 2000 and 2010 independently, and examine pubs' impact on individual index components².

Data for the two time points were collected from a number of sources. For the year 2000 data relating to the index domains were collected from the Office for National Statistics (ONS), the National Archives, and the SRS for 2,769 rural parishes across England. Rural parishes were identified following the definition proposed by Cabras and Reggiani (2010, 6), "as areas with no more than 3,000 inhabitants, situated at least 5 miles (or 10 minutes' drive) from towns or larger parishes counting 5,000 inhabitants or more". This definition naturally excludes London and other major conurbations such as Manchester, Birmingham, and Liverpool, and was deployed as a standard to distinguish rural areas from larger town and city areas with higher levels of infrastructure. Data relating to the number of pubs present in each parish were collected from the National Archives and CAMRA.

For the 2010 discrete time point, data collected from local parish authorities and local RSNs provided information relating to 1,232 rural parishes. Comparing the two datasets (2000 and 2010), the authors matched observations for 284 rural parishes, comprising longitudinal information into a unique dataset. Table 2 provides basic summary statistics of the resultant parish sample, classified with regard to administrative regions. In addition, Figure 2 show the decline of services in the parishes examined between 2000 and 2010.

² All of the statistical models are estimated using the 'GSEM' command and ordinal probit link function in STATA statistical software version 13 (STATACORP, 2013).

As expected, the descriptive statistics show a sharp decline in the average number of pubs over the 10-year period, which results more significant in comparison to other local facilities. However, despite such decline, there is a slight increase in community cohesion observed. This represents an interesting paradox given our proposition that pubs are essential drivers of community cohesion, which will be investigated further in the following econometric analysis. Figure 3 provides a visual presentation of how parishes are distributed over the community cohesion index. Parishes tend to be normally distributed, with the bulk of observations falling between levels 3 and 6 on the COMCOH index – 81% of observations for 2001 and 69.3% for 2010.

[INSERT TABLE 2 HERE]

TABLE 2. Summary statistics

[INSERT FIGURE 3 HERE]

FIGURE 3. Decline of services within parishes examined (counts)

[INSERT FIGURE 2 HERE]

FIGURE 3: Distribution of parishes across community cohesion index

4. Empirical Results

Results of the ordinal probit SEM for fixed effect and mixed effect models are presented in Table 3. The purpose of running two separate analyses is to evaluate the degree of

significance attributed to potential random variations between discrete time points using a log-likelihood ratio test. The fixed effect coefficient of pubs in Model 1 (0.244, $p < 0.01$) shows a positive and statistically significant relationship, indicating a sustained cause-effect link between pubs and levels of community cohesion over a 10-year period. This model, however, does not account for potential random variations over time, which may inflate or deflate effect sizes. To rectify this, the authors introduce a latent index variable to estimate a variance parameter for time. Considering these effects, estimates in Model 2 show an increase in the magnitude of impact observed between pubs and community cohesion (0.396, $p < 0.01$) with a high degree of variance between time points accounting for this disparity ($\sigma^2 = 0.286$). The path diagrams depicted in Figure 3 provide a visual representation of these results and report the direct effects between structural paths.

The index threshold estimates report the average marginal effect for a unit increase in pubs at each level of the community cohesion index. Results show that for parishes with low levels of reported community cohesion ($0 \leq COMCOH \leq 4$), a unit increase in pubs would cause a negative change in impact, with $COMCOH = 3$ causing the largest decline. In contrast, for parishes reporting moderate to high levels of community cohesion ($5 \leq COMCOH \leq 11$), a unit increase in pubs would cause a positive change in impact, with $COMCOH = 7$ causing the largest increase. This general pattern is observed across both Model 1 and Model 2. However, not all estimates reported in Model 2 are statistically significant. Analysis of the log-likelihood ratio test conducted between these two models indicates that Model 2 provides a superior fit ($p < 0.01$), which emphasizes the statistical significance of the randomized time variance parameter. Results show that when neglecting random variation owing to time, Model 1 actually underestimates pubs' impact on community cohesion.

[INSERT TABLE 3 HERE]

TABLE 3. SEM results for fixed and mixed effects

[INSERT FIGURE 3 HERE]

FIGURE 4: SEM Path diagrams for fixed and mixed effects

Next, having established Model 2 as superior, population size is introduced to Model 2 as a categorical control variable, which separates parishes into four equal quartiles of population size ‘*n*’, such that: Group 1 = $n < 241$; Group 2 = $241 \leq n < 420$; Group 3 = $420 \leq n < 925$; Group 4 = $n \geq 925$. Results gathered from these population groupings are presented in Table 4. The estimates show a strong, statistically significant relationship between pubs and community cohesion across all groupings except Group 2. Interestingly, the magnitude of impact decreases moving from the smallest towards the largest rural parishes. Analysis of variance parameters for time indicates a similar degree of variability between time points for each population grouping, which suggests a relatively stable degree of change between groupings over the 10-year period.

The marginal effects provided in Table 4 show the differences in population groupings for a unit increase in pubs on each observed level of the index. Interestingly, the dynamics of change for each population grouping are quite distinct, with the largest reported negative and positive changes increasing with population size. For example, the largest positive change level for Group 1 is $COMCOH = 5$, whereas for Group 4 it is $COMCOH = 8$.

 [INSERT TABLE 4 HERE]

TABLE 4. SEM results for population groupings

Finally, to explore the differences in impact between discrete time points, as indicated from previous variance parameters, two independent SEM models (Model 3 and 4) are run in order to isolate observations to each year. Table 5 presents the results of this ordinal modelling procedure. Results show a strong, statistically significant relationship between pubs and community cohesion in each time point. However, the magnitude of impact has more than doubled moving from 2000 to 2010. This result is important when considering the significant decline of pubs in rural areas. Analysis of marginal effects shows the differences in discrete time points for a unit increase in pubs on each observed level of the index. There is also a significant difference in the dynamics of change between each time point, with the largest positive index level shifting from $COMCOH = 6$ in 2000 to $COMCOH = 8$ in 2010. Furthermore, the magnitude of this change trebles (from 0.042 to 0.133) over the 10-year period.

The path diagrams depicted in Figure 4 provide a visual representation of these results and report the direct effects of the independent models between structural paths on the overall index and individual index components. Analysis of individual components reveals some interesting results. In particular, leisure (*LEI*), communication (*COM*), and food facilities (*FF*) are all strong positive and statistically significant across both time points. However, the magnitude of impact in each component increases significantly over time, suggesting an increasing criticality of pubs in rural areas. Moreover, the rank order of index components

indicates a potential change in the fabric of pubs, shifting from a focus on leisure activities towards food facilities, such as the gastro pub and bistro bars.

[INSERT TABLE 5 HERE]

TABLE 5. SEM results for independent models

[INSERT FIGURE 4 HERE]

FIGURE 5: Path diagrams of independent structural model results.

5. Discussion

The analysis conducted in the previous section and its related findings provide more clarity with regard to the functional relationship between pubs and levels of community cohesion in rural areas of England. Overall, results identify the positive impact of pubs in promoting social engagement and involvement among residents living in the English countryside.

The SEM analysis applied to data collected between 2000 and 2010 show a strong, statistically significant impact of pubs on the level of community cohesion, measured by the *COMCOH* index, and sustained over time. Considering random variations in time, results indicate that the magnitude of impact of pubs has increased over the last decade. This demonstrates an increasing criticality of pubs for sustaining rural life and wellbeing in the area in terms of *COMCOH*. However, the marginal effects, which enable us to identify at which point a unit increase in pubs either increases or decreases the observed impact on *COMCOH*, indicate that more pubs do not necessarily increase the levels of community

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3 cohesion observed in the parish. Perhaps, a higher concentration of pubs in such small
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5 villages and remote areas may generate and amplify the magnitude of possible negative
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7 externalities, e.g. noise. Given the difference in margins within the population groups
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9 considered, this appears to be the case in larger parishes, e.g. an increase in pubs in parishes
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11 with *COMCOH* = 5 induces a positive change for population Group 1 but a negative change
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13 for population Group 4.
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16 However, the individual analysis of each time point conducted by using an aggregate
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18 mixed effect model confirms the increase in impact of pubs on *COMCOH*, showing a
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20 dramatic increase in criticality of pubs over time. Moreover, the individual analysis of index
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22 components suggests a change in business focus of pubs over the last decade, with a shift in
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24 rank order from leisure to food facilities between 2000 and 2010. This finding corroborates
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26 evidence in literature (Lincoln, 2006; Pratten, 2007) and confirms the significance of the
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28 gastro-pub phenomenon in rural and remote areas of England, with possible positive
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30 externalities on local economies emerging from this shift e.g. pubs purchasing from local
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32 supply chains.
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37 By considering the population size of parishes analysed, the authors demonstrate the
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39 importance of pubs regardless of the infrastructural endowments available at a local level.
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41 This aspect is important given the number of people relocating from urban areas to the
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43 countryside, which has constantly increased in recent years. The Commission for Rural
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45 Communities (2010) indicates that the net migration from urban to rural areas in England
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47 during 2009 was 92,000 people. This figure reveals a renewed interest for living in rural
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49 areas. However, “only if people in rural communities have ready access to local schools,
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51 local jobs, local shops and pubs, and homes which are affordable, will they and their children
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53 thrive, and will the nation meet its environmental and economic needs” (Commission for
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55 Rural Communities 2010, p. 28). Yet, the declining number of services available in these
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3 areas to accommodate increases in population also has a direct impact on the local supply
4 chain, hindering firms and enterprises that were dependent on those services for their
5 business. Thus, to ensure that the quality of life of rural residents is maintained, there is a
6 distinct need to promote factors associated with community cohesion and social integration
7 (Atterton 2007).
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14 The last statement appears to be particularly relevant in relation to smaller parishes,
15 frequently characterized by an ageing population and lower availability of facilities and
16 services. As confirmed by the analysis conducted in this study, the presence of one or more
17 pubs operating in these communities has a more significant impact on the index of
18 community cohesion used by the authors compared to larger parishes. Therefore, the
19 disappearance of pubs would represent a far higher loss in terms of social wellbeing,
20 suggesting the need of defining ‘community pubs’ in a more specific way within business
21 classifications (All Party Parliamentary Beer Group, 2008). This would help to legislate in
22 favour of these and other rural businesses and to design ad-hoc measures (e.g. business rate
23 relief schemes) for supporting pubs and preserving their benefits to residents as well as other
24 businesses in rural areas.
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38 Government and policymakers can then play an important role with regards to halting the
39 decline of pubs in rural England and more generally in the UK. The Localism Act introduced
40 by Parliament in 2011 increases the level of control for local authorities and parish councils
41 on matters that arise within local communities, including decisions related to community
42 assets and services. In particular, community groups are given priority with regards to
43 services and assets of community value, such as pubs, village shops, libraries, and post
44 offices: these places can be identified by community groups to local authorities, which are
45 then required to insert them on a protected list. When listed assets come up for sale or change
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of ownership, community groups are given enough time to raise funds to bid and buy the asset when it comes on the open market (Parliament, 2011).

Intervening on taxation and alcohol duties would also help to reduce pubs' decline. Between 2008 and 2012, their rise generated a progressive increase in the price of an average pint and a steady decline in beer sales in the on-trade market, determining a surge of pub closures across the country (British Beer and Pubs Association, 2015). The three consecutive cuts by 1p per pints introduced in Governments' Budgets between 2013 and 2015 have been cheered by numerous trade and industry associations, although the debate regarding an appropriate level of duty for beer and other alcoholic beverages is still ongoing. However, while changes in the level of taxation may benefit the pub industry, a significant difference in prices between the on-license and off-license still remains (All Party Parliamentary Save the Pub Group 2014).

Particularly for pubs operating in smaller and remote communities, the combination of higher on-trade prices and reduced transport alternatives has a tremendous impact on their survival rates, with many pubs failing to attract enough custom to be financially sustainable. More pub closures would further reduce the number of opportunities in terms of socialisation and engagement for local residents, with the consequence of increasing home drinking habits, posing considerable threats in terms of health and wellbeing in rural areas (Pratten, 2004; Mount and Cabras, 2015).

In light of these considerations, the findings gathered from this study may provide an opportunity for policymakers and local administrators to evaluate the positive impacts rural pubs and other third places have in the villages they serve, and to better assess current policies and actions supporting the development and maintenance of spatially remote communities.

6. Conclusions

The econometric analysis proposed in this paper corroborates evidence from recent studies highlighting a strong positive relationship between the presence of pubs, identified as third places of reference in this study, and higher levels of community cohesion occurring in the English countryside. Moreover, results confirm that this relationship is maintained over time regardless parish size, although different impacts are found in the two time-points considered.

These results add to the literature related to the measurement of community wellbeing and the development of community cohesion with regard to third places fostering social aggregation and communal initiatives. Since the study is based on a longitudinal examination, it may stimulate research on themes and issues regarding the impact of third places on community cohesion and social capital in rural and remote communities, increasing the amount of information and data available. In addition, findings from this study provide a valuable instrument for policymakers and local administrators to evaluate policies and actions in support of their communities.

While the analysis proposed offers an original contribution to the field, it also presents some limitations. For instance, due to the nature of the data, this study could not explore the impact of pubs with regard to bridging and bonding social capital within local communities. These forms of social capital may be affected in different ways and at different stages by activities fostered and facilitated by pubs and other third places, which could also have had an impact on community cohesion and wellbeing in the English countryside. However, the number of other potential third places in the parish considered for this study was significantly smaller compared to the number of pubs, and did not provide the authors with a sufficient range of observations to conduct their analysis. In addition, due to the paucity of longitudinal data, the impact of pubs on community cohesion and wellbeing has been examined in two

defined periods only. Undoubtedly, a higher availability of data collected in several points of time would have further increased the quality of this study in terms of generalisation and contribution to knowledge.

Another potential limitation relates to the variables used to create the COMCOH index, since its composition has a direct impact on the models and therefore on the findings. To minimise the risk of misspecification (e.g. inadequacy of independent variables in explaining the dependant) and as reported in the analysis, the authors verified and tested for issues related to sample variation and outliers (e.g. observations departing from the distribution mean) with regard to each variable. This exercise increased both robustness and reliability of the COMCOH, which is rigorous in capturing the association between pubs and social and community cohesion from an econometric perspective, although the availability of other information in the models might even increase its accuracy. For instance, the COMCOH uses the parish newsletter as a proxy for addressing the level of communication within the community, in absence of any information available about the type and amount of social media exchanges among local residents, e.g. profiles in social networks, virtual communities, and parish websites. While the COMCOH represent a valuable tool, the authors are fully aware that individual relationships and networks developing in and around third places such as pubs are complex and in constant evolution, and that capturing these relationships is a challenging task.

More specifically to pubs, the analysis developed in this study was not able to verify if and how the changes in the pub sector (i.e. ownership structures) had any effect on this relationship. Again, this was mainly due to the types of data available, which did not provide information about pub-ownership. This paucity in the data may be even magnified by the high level of turnover occurring in the market, which is often unreported. Future research may focus on examining different ownership structures of pubs and their relationship on

community dynamics e.g. the role of independent free houses compared with those administered by large pubcos, which may identify and measure the effects on rural communities' wellbeing associated with different types of pubs' ownership and management.

Finally, the authors based their analysis on rural areas focusing on the most spatially remote, which usually tend to have a less diversified population in terms of age, employment, ethnic and cultural background. A similar analysis conducted in urban and metropolitan areas will need to consider more aspects and higher levels of variation among social components compared to the one presented in this study. However, the use of SEM and the type of methodology illustrated could be applied to different areas and contexts, providing an incentive for more empirical investigations in the fields of community cohesion, third places and social capital.

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Tables and Figures

Table 1. Index components and variables

Domain	Variables	Description	Matched variables*
Leisure activities (LEI)	Beavers	Presence of beavers/cubs/venture scouts operating within the parish	X
	Bowling green	Parish contains a bowling green available for use by local residents	
	Brownies	Presence of brownies/rainbows/guides operating within the parish	
	Cricket matches	Whether cricket matches are held within the parish	
	Football/ rugby matches	Whether football/ rugby matches are held within the parish	
	News	Parish has a community newsletter	X
	Playing field	Parish contains a playing field available for use by local residents	X
	Retired club	Presence of retired club operating within the parish	X
	Sports hall	Parish contains a sports hall available for use by local residents	X
Communication (COM)	Tennis court	Parish contains a tennis court available for use by local residents	
	Worship	Presence of worship centres/churches in parish	X
	Festival/galas	Whether festival/galas are held within the parish	
	Markets	At least one market operating within the parish	X
	Music/art events	Whether music/art events are held within the parish	
Food facilities (FF)	Noticeboard	Parish has a public noticeboard	X
	Social club	Presence of social club in parish	X
	Cafés	At least one café operating within the parish	X
	Restaurants	At least one restaurant operating within the parish	X
Volunteering (VOL)	Takeaways	At least one takeaway operating within the parish	
	Voluntary clothes recycling	Presence of voluntary organisation(s) providing clothes recycling	X
	Voluntary paper recycling	Presence of voluntary organisation(s) providing paper recycling	

* Variables for which data are available in the two time-points considered (2000 and 2010)
Notes: All variables are coded as binary and provided in alphabetical order; sport matches classified as taking place on regular basis if frequency is above or equal to two matches per month, music/art events at least once a month.
Sources: The National Archives; Cambridgeshire County Council, Wiltshire County Council, Community Impact Buckinghamshire, Northamptonshire ACRE, Suffolk ACRE, the Rural Community Council of Essex and the Rural Community Council of Leicestershire and Rutland

Table 2. Summary statistics

Region	Frequency	Pubs			COMCOH		
		Mean	SD	Range	Mean	SD	Range
EM (Total)	21 (7.4)	1.98	1.91	0 – 6	4.67	1.83	2 – 9
2001		2.76	2.19	0 – 6	4.67	1.83	2 – 9
2010		1.19	1.17	0 – 5	4.97	1.96	2 – 9
EE (Total)	183 (64.4)	1.21	1.36	0 – 12	4.99	1.74	0 – 11
2001		1.70	1.65	0 – 12	4.73	1.69	0 – 11
2010		0.71	0.69	0 – 5	5.39	1.74	0 – 11
SE (Total)	13 (4.6)	0.94	1.21	0 – 4	5.19	1.94	0 – 8
2001		2.08	1.38	0 – 4	4.54	1.20	3 – 6
2010		0.77	0.44	0 – 1	5.85	2.34	0 – 8
SW (Total)	67 (23.6)	1.4	1.233	0 – 6	4.40	1.46	1 – 8
2001		1.85	1.41	0 – 6	4.40	1.46	1 – 8
2010		0.94	0.814	0 – 5	4.79	1.72	1 – 8

Notes: This table presents basic summary statistics by region for the parishes used in SEM analysis: EM = East Midlands; EE = East of England; SE = South East; SW = South West. SD = standard deviation. Percentages reported in parentheses.

Table 3. SEM results for fixed and mixed effects

	Model 1	Model 2
Total pubs ^a	0.244*** (0.034)	0.396*** (0.039)
Index threshold	Marginal effects	Marginal effects
COMCOH=0	-0.006* (0.003)	-0.005 (0.005)
COMCOH=1	-0.006* (0.003)	-0.004 (0.004)
COMCOH=2	-0.011** (0.004)	-0.010 (0.007)
COMCOH=3	-0.042*** (0.007)	-0.060*** (0.016)
COMCOH=4	-0.026*** (0.004)	-0.050** (0.018)
COMCOH=5	0.009** (0.003)	0.004 (0.028)
COMCOH=6	0.024*** (0.004)	0.034** (0.012)
COMCOH=7	0.029*** (0.005)	0.046*** (0.008)
COMCOH=8	0.021*** (0.004)	0.035* (0.014)
COMCOH=9	0.004~ (0.002)	0.006 (0.005)
COMCOH=10	NA	NA
COMCOH=11	0.005* (0.002)	0.010 (0.008)
Time ^b	NA	0.286 (0.294)
Log-likelihood ^c	-763.310	-730.324

Notes: ***Significant at <0.001; **<0.01; *<0.05; ~<0.1. ^aFixed effect variable; ^bRandom effect variable.; ^cModel fit measures. Marginal effects are only calculated for fixed portions of each model.

Table 4. SEM results for population groupings

	Group 1	Group 2	Group 3	Group 4
Total pubs ^a	0.322** (0.125)	0.134 (0.120)	0.231* (0.098)	0.145* (0.068)
Marginal effects				
COMCOH=0	-0.015 (0.013)	-	-	-0.002 (0.003)
COMCOH=1	-0.011 (0.009)	-0.002 (0.003)	-0.003 (0.004)	-
COMCOH=2	-0.020~ (0.092)	-0.005 (0.006)	-0.007 (0.007)	-
COMCOH=3	-0.074* (0.030)	-0.026 (0.022)	-0.007 (0.006)	-0.009 (0.007)
COMCOH=4	0.022 (0.032)	-0.020 (0.020)	-0.048* (0.022)	-0.010 (0.006)
COMCOH=5	0.050* (0.021)	0.021 (0.018)	-0.024 (0.021)	-0.022* (0.010)
COMCOH=6	0.021 (0.014)	0.020 (0.017)	0.021 (0.017)	-0.013 (0.011)
COMCOH=7	-	0.009 (0.009)	0.034* (0.015)	0.011 (0.011)
COMCOH=8	-	0.003 (0.005)	0.028 (0.018)	0.026* (0.012)
COMCOH=9	-	-	-	0.009 (0.007)
COMCOH=10	-	-	-	-
COMCOH=11	-	-	-	0.009 (0.009)
Time ^b	0.202 (0.234)	0.157 (0.189)	0.212 (0.244)	0.148 (0.192)

Notes: ***Significant at <0.001; **<0.01; *<0.05; ~<0.1. ^aFixed effect variable; ^bMixed effect variable. Group 1= $n < 241$; Group 2= $241 \leq n < 420$; Group 3= $420 \leq n < 925$; Group 4= $n \geq 925$. Marginal effects are only calculated for fixed portions of each grouping model.

Table 5. SEM results for independent models

	Model 3	Model 4
Total pubs	0.392*** (0.041)	1.061*** (0.186)
Index Threshold	Marginal effects	
COMCOH=0	-0.007 (0.004)	-0.037 (0.023)
COMCOH=1	-0.013* (0.006)	-
COMCOH=2	-0.021** (0.006)	-0.015 (0.015)
COMCOH=3	-0.069*** (0.009)	-0.084** (0.030)
COMCOH=4	-0.024*** (0.005)	-0.200*** (0.034)
COMCOH=5	0.024*** (0.005)	-0.021 (0.018)
COMCOH=6	0.044*** (0.007)	0.048** (0.015)
COMCOH=7	0.042*** (0.007)	0.108*** (0.025)
COMCOH=8	0.019** (0.006)	0.133*** (0.034)
COMCOH=9	0.002 (0.002)	0.029 (0.020)
COMCOH=10	-	-
COMCOH=11	0.003 (0.002)	0.039~ (0.024)

Notes: ***Significant at <0.001; **<0.01; *<0.05; ~<0.1.

Figures.

FIGURE 1: Map of rural parishes identified for this study

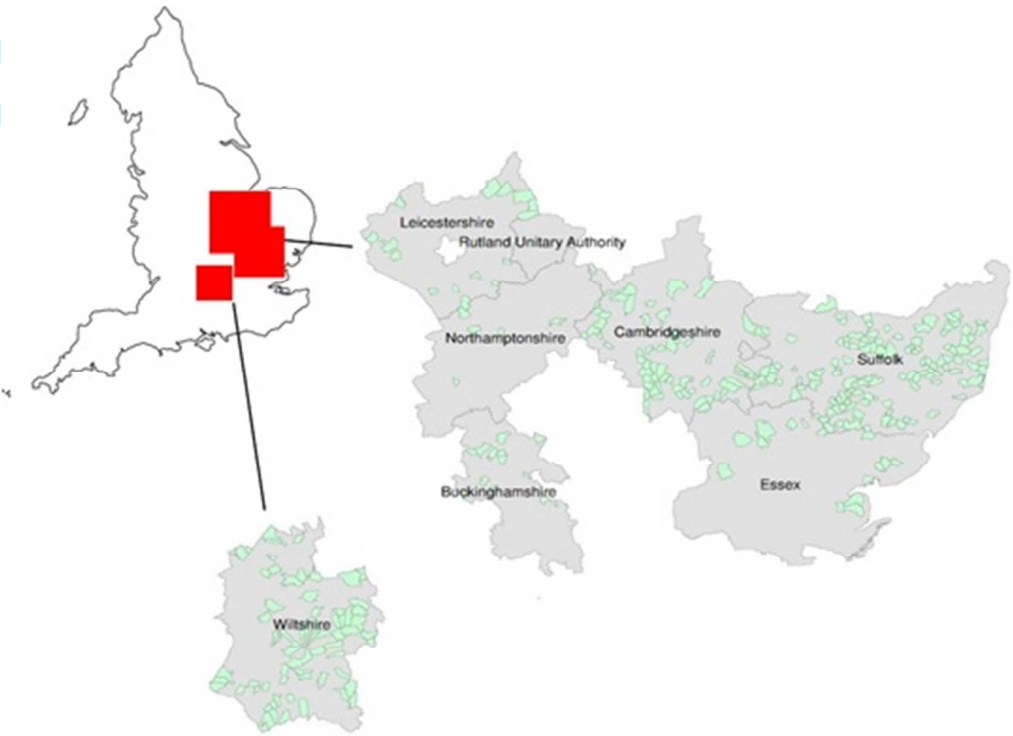


FIGURE 2: Decline of services within parishes examined (counts)

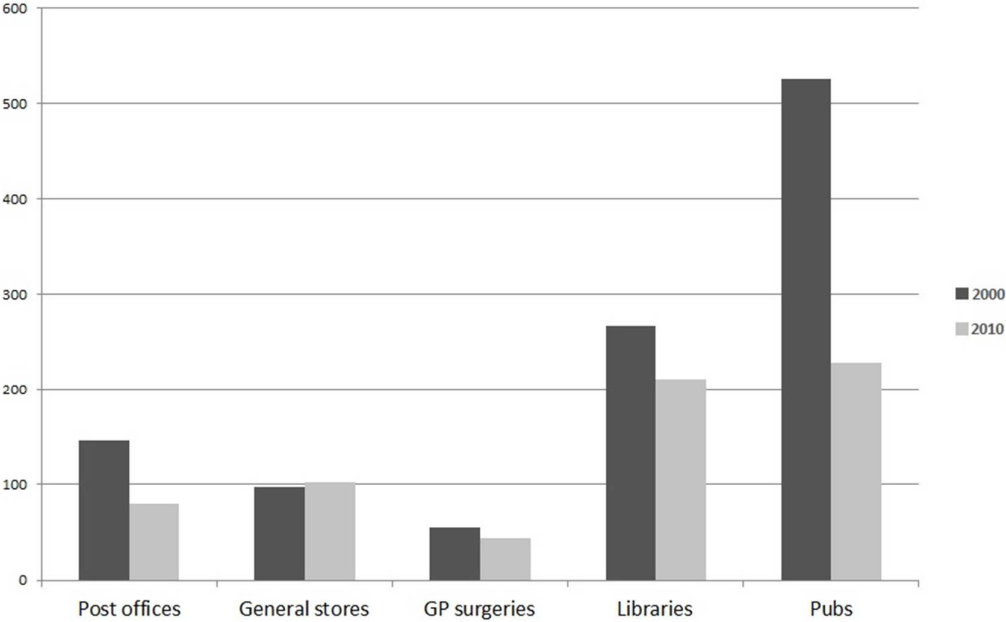


FIGURE 3: Distribution of parishes across community cohesion index

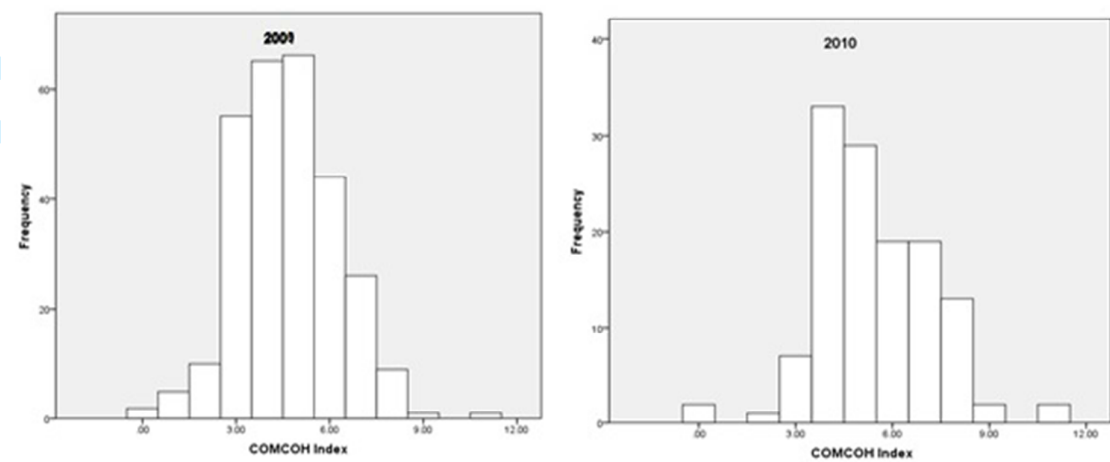


FIGURE 4: SEM Path diagrams for fixed and mixed effects

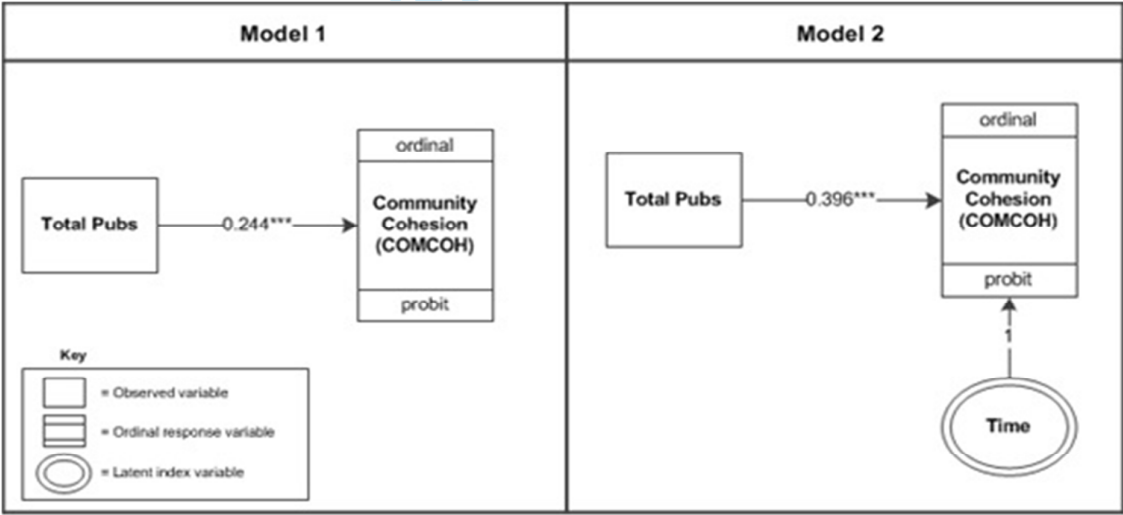
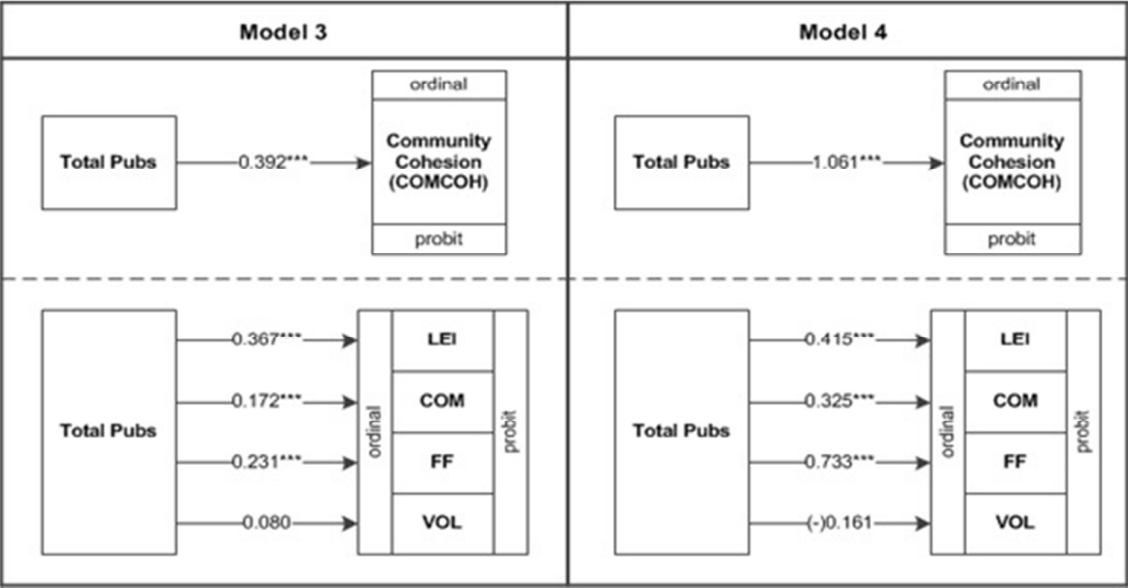


FIGURE 5: Path diagrams of independent structural model results.



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Author Response Form

When revising your paper, please prepare this report explaining how you have responded to each reviewer’s comments and suggestions specifically.

REVIEWER A

Suggestions/comments from the Reviewer	Response from the Author(s)
1. <i>I feel that the only actual improvement that needs to be implemented in this version of the manuscript is the recommendations provided for government and policymakers (pp.19-20 - in red fonts). This part needs better discussion / justification.</i>	We have developed this part further by expanding on the implications related to increased taxation and alcohol duties for rural pubs. In particular, we discussed how recent changes might have had a positive impact on the pub industry, indicating a number of benefits for spatially remote communities associated with preserving pubs from unnecessary closures.
2. <i>Although this version of the manuscript reads better than the original submission, there are still a few points that need your attention i.e. in conclusion (p20 - lines 54-56) there is repetition of the word 'present' - the sentence needs to be rephrased</i>	The sentence has been re-phrased to avoid repetition. In addition, the entire manuscript has been proofread twice, and referencing have been double-checked for consistency.
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REVIEWER B

Suggestions/comments from the Reviewer	Response from the Author(s)
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REVIEWER C (if applicable)

Suggestions/comments from the Reviewer	Response from the Author(s)
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